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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,545	05/22/2001	Hartwig Schlesiger	M0-6342/WW-5	9717

34947 7590 10/21/2003

BAYER CHEMICALS CORPORATION  
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PITTSBURGH, PA 15205

EXAMINER
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KRISHNAN, GANAPATHY

ART UNIT	PAPER NUMBER
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1623

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/856,545

Applicant(s)

SCHLESIGER, HARTWIG

Examiner

Ganapathy Krishnan

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,7-9 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7-9 and 12-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

The response filed on August 11, 2003 has been received and entered into the record. The following information provided in the amendment affects the application:

1. Remarks drawn to rejections under 35 USC 112 second paragraph and 103(a).

Claims 1-3, 5, 7-9 and 12-15 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 112***

Claims 13 and 14 were rejected as substantial duplicates. Claim 13 was also dependent from claim 6, which was cancelled. This rejection is being maintained. Applicants argue that claims 13 and 14 have sufficient claim differentiation. This argument is not found to be persuasive. As recited the claims are duplicates. The only difference seen is that claim 13 depends from claim 6, which has been cancelled. Hence claim 13 should be cancelled or amended to overcome the rejection of record.

#### ***Claim Rejections - 35 USC § 103***

Claims 1-3, 5, 7-9 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angerer et al (USPN 5,480,984) in combination with Hilbig et al (USPN 5,708,162), Gill (953944) and Janocha et al (DE 1543116) all of record is being maintained for reasons set forth in the office action dated Feb. 11, 2003.

Applicants' arguments have been considered but are not found to be persuasive.

Applicants have argued each prior art of record individually. There may not be a basis to modify any individual reference cited. The consideration of the examiners prima facie case of obviousness requires the prior art teachings to be taken collectively.

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Angerer teaches the preparation of low viscosity cellulose ethers using hydrogen peroxide at a temperature, which is within the recited range and also with agitation. The process of Angerer also includes step-by-step addition of hydrogen peroxide with the solids content being above 25%. Angerer also states that there is reduction in viscosity and the process is conducted till more than 90% of hydrogen peroxide is consumed (see col. 2, line 56 to col. 3, line 2 and example 1, col. 4). This disclosure of Angerer would convey to one of ordinary skill in the art that the viscosity of cellulose ethers can be lowered from a higher value even though there is no explicit teaching of this fact.

Gill teaches reduction of viscosity of cellulose ethers using hydrogen peroxide in the temperature range 70-100 degree Celsius at a pH of between 5 and 9. Gill also states that it is advantageous to take a high viscosity cellulose ether and reduce its viscosity to the desired value (col. 1, lines 37-40). Gill's teaching shows that the reduction in viscosity can be carried out at a wider range of temperature.

Even though Hillbig uses perborate as the oxidizing agent in his process, he also shows a comparison of the process using perborate and hydrogen peroxide (Table 1 and Table 3). The reduction in viscosity in both cases is comparable even though they are not exactly the same. Hilbig also discloses that the process using hydrogen peroxide is advantageously carried out at an alkaline pH (col. 2, lines 13-15).

Janocha teaches a process for production of low-viscosity cellulose ethers by oxidation of high viscosity cellulose ethers with hydrogen peroxide, the process being characterized by intense mixing and the peroxide concentration being 0.1 to 10 weight percent with respect to the dry substance (see page 4, lines 1-10 of English translation). Janocha also discloses the fact that acidic products are produced during decomposition

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and hence it is advantageous to neutralize the mixture by adding sodium carbonate or sodium hydroxide (see page 5, line 13 through page 6, line 2). The process can also be run only till just 5% of hydrogen peroxide remains and the resulting product can be sold without having to remove excess hydrogen peroxide (see page 5 second paragraph). This is an advantage since it cuts down on the process time especially in a manufacturing process.

Based on the teachings cited above one of ordinary skill in the art can see that low viscosity cellulose ethers can be produced from high viscosity cellulose ethers via a process as instantly claimed is indeed *prima facie* obvious. The advantage of combining the teachings of the art cited above includes:

1. Gill teaches the advantage of starting with a high viscosity cellulose ether and reducing the viscosity via oxidation and also conducting the process at a pH of 5-9.
2. Both Gill and Angerer teach the production of low viscosity cellulose ethers at a higher temperature whereby process times are lowered.
3. Janocha teaches preparation of low viscosity of cellulose ethers wherein the percentage of peroxide used is 0.1 to 10% and uses alkali salts to control the pH to neutral.

It would be advantageous to combine the teachings of the prior art to produce low viscosity cellulose ethers starting from high viscosity cellulose ethers as instantly claimed because of the advantage as disclosed by Gill. Moreover, performing the process at a neutral or alkaline pH and at a higher temperature reduces the process time and reduces acidic impurities. Since Angerer discloses (col. 2, lines 46-49) that hydrogen peroxide when used at a considerable proportion decomposes and is inactive, it is advantageous to

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use lower concentrations (as seen in Janocha) to minimize decomposition. Any unreacted hydrogen peroxide will also be minimal and need not be removed according to Janocha. Hence a process as instantly claimed is obvious from the teachings of the prior art and is also highly economical when combined.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ganapathy Krishnan whose telephone number is 703-305-4837. The examiner can normally be reached on 8.30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 703-308-4624. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

JAMES O. WILSON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600

